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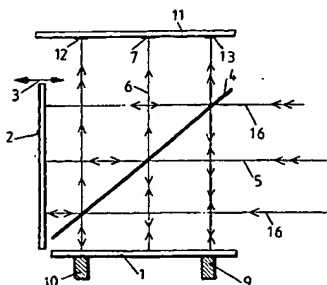
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(54) Title: **INTERFEROMETER OPTICAL ELEMENT ALIGNMENT**



(57) Abstract: A method for aligning an optical element of an optical interferometer in which a beam of light interacts with the optical element and the optical element is tilted about first and second axes to adjust the relative phase of components of the beam. At least three parallel alignment beams of monochromatic light are directed through the interferometer towards respective detectors. The detectors are arranged in pairs such that tilting the optical element about the first axis does not affect the relative phase of components of each of the beams directed towards a first pair of detectors and tilting the optical element about the second axis does not affect the relative phase of components of each of the beams directed towards the second pair of detectors. One detector may form part of each of the first and second pairs of detectors. A first estimate of an aligned optical element position is derived by determining from an output of at least one detector a first element position at which the magnitude of the beam incident on that detector is a maximum. Second estimates of aligned element positions are also derived by determining second element positions at which the phase differences between beams incident on each of the pairs of detectors are a minimum. The element is aligned by moving it to a final position which is one of the second positions which is at or adjacent the first position. A set of second element positions may be determined, the element being moved to each of the set of second element positions in turn. The magnitude of outputs of at least one of the detectors may then be monitored at each of the second element positions to which the element is moved, and the element may be moved to the final position which corresponds to the position at which the monitored magnitude is a maximum.

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